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EXAMINER

CRAIG, DWIN M

ART UNIT PAPER NUMBER

2123

DATE MAILED: 12/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/469,754

Applicant(s)

TSUKAMOTO ET AL.

Examiner

Dwin M Craig

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12-22-99.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 08/879696.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

1. Claims 1-39 have been presented for examination. Claims 1-39 have been examined and rejected.

Specification

2. The Examiner notes that this application is a Continuation In Part of Patent Application Number **08/879,696** which has issued as **U.S. Patent 6,094,527**. There does not appear to be new matter in the applicant's application as compared with the matter disclosed in **U.S. Patent 6,094,527**. Please note, that **Figure 2, item 13** of **U.S. Patent 6,094,527** is a typical example of computer readable media. A computer hard disk can be written to as well as read from. The addition of **items 16a and 16** in **figure 2** do not, in the view of the examiner, constitute the addition of new matter because **item 13**, of the same figure, contains computer readable media with read/write ability, **item 13**. Clarification is requested.

Drawings

3. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal Drawings will be required when the application is allowed. The drawings filed on 22 December 1999 are acceptable subject to correction of the formalities listed in the attached "Notice of Draft person's Patent Drawing Review," PTO-948.

Nonstatutory Double Patenting

A rejection based on nonstatutory double patenting is based on a judicially created doctrine grounded in public policy so as to prevent the unjustified or improper timewise extension of the right to exclude granted by a patent. In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969); In re White, 405 F.2d 904, 160 USPQ 417 (CCPA 1969); In re Schneller, 397 F.2d 350, 158 USPQ 210 (CCPA 1968); In re Sarett, 327 F.2d 1005, 140 USPQ 474 (CCPA 1964).

4. **Claims 25, 29 and 37** under the judicially created doctrine of obviousness-type double patenting as being unpatentable over **Claim 4** of **U.S. Patent No. 6,094,527**. Although the conflicting claims are not identical, they are not patentably distinct from each other because the Claim in the Applicants application is describing an *apparatus* as in **Claim 4** of **U.S. Patent 6,094,527**. One of ordinary skill in the art, at the time of the invention, would use a *programmable computer* as an apparatus for estimating power consumption because it would be faster than performing the calculations by hand. It would have been obvious, to have used a processor for executing computer executable code and to have had code for carrying out logic simulations of circuit data for basic cells and mega cells as disclosed in **Claim 4** of **U.S. Patent 6,094,527**. The examiner notes that the only apparatus disclosed in **U.S. Patent 6,094,527** is a computer with computer readable media (*see figure 2 in U.S. Patent 6,094,527*).

5. **Claims 33 and 39** are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over **Claim 6** of **U.S. Patent No. 6,094,527**. Although the conflicting claims are not identical, they are not patentably distinct from each other because the Claim in the Applicants application is describing an *apparatus* as in **Claim 6** of **U.S. Patent**

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6,094,527. One of ordinary skill in the art would use a *programmable computer* as an apparatus for estimating power consumption as regards a simulation, therefore it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to have used a processor for executing computer executable code and to have had code for carrying out logic simulations of circuit data for basic cells and mega cells as disclosed in **Claim 6** of **U.S. Patent 6,094,527** because it would be faster than performing the calculations by hand. The examiner notes that the only apparatus disclosed in **U.S. Patent 6,094,527** is a computer with computer readable media (*see figure 2 in U.S. Patent 6,094,527*).

6. **Claim 1** is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over **Claim 1** of **U.S. Patent No. 6,094,527**. Although the conflicting claims are not identical, they are not patentably distinct from each other because the Claim in the Applicants application is describing a *method* steps encoded on media and **Claim 1** in U.S. Patent number 6,094,527 is claiming a method. For example, the Applicant is claiming in **Claim 1** of the Application that, "*a computer readable medium, including computer executable code stored thereon, the code...*" this portion is describing a method of performing applicant's simulation with the addition of a computer readable media, which was disclosed in applicant's first Patent as a hard disk (*see figure 2 U.S. Patent 6,094,527 item 13*) and is therefore is not patently distinct from **Claim 1** of **U.S. Patent No. 6,094,527**. Claim 1, of the patent, does not expressly recite "computer readable media". However it would have been obvious, by one of ordinary skill in the art, at the time of the invention, to have used computer readable media as this would have facilitated the use of the method on a computer.

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7. **Claim 17** is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over **Claim 3** of U.S. Patent No. 6,094,527. Although the conflicting claims are not identical, they are not patentably distinct from each other because the Claim in the Applicants application is describing the same invention as disclosed on **Claim 3** of U.S. Patent number 6,094,527 is claiming a method. For example, the Applicant is claiming in **Claim 17** of the Application that, "*a computer readable medium, including computer executable code stored thereon, the code...*" this portion is describing a method of performing applicant's simulation with the addition of a computer readable media, which was disclosed in applicant's first Patent as a hard disk (*see figure 2 U.S. Patent 6,094,527 item 13*) and is therefore is not patentably distinct from **Claim 3** of U.S. Patent No. 6,094,527. Claim 3, of the patent, does not expressly recite "computer readable media". However it would have been obvious, by one of ordinary skill in the art, at the time of the invention, to have used computer readable media as this would have facilitated the use of the method on a computer.

Claim Objections

8. **Claim 29** is objected to under 37 CFR 1.75 as being a substantial duplicate of **Claim 25**. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Interpretation

9. The Examiner has given the broadest possible interpretation to Claims. For the purposes of examination the examiner has determined that the *Logic of basic and Mega Cells of an Integrated Circuit* phrase refers to the logic gates in an Application Specific Integrated Circuit or ASIC or in the case of **Claims 9 and 38** a Field Programmable Gate Array and as such has interpreted the *Logic of a Mega Cell* to mean the groups of transistors at the Gate level of the ASICs and FPGAs.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 1-39** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Messerman et al. U.S. Patent 5,943,487** in view of **Dangelo et al U.S. Patent 6,324,678** and in further view of **Koza et al. U.S. Patent 5,867,397** and in further view “**Microsoft Press Computer Dictionary, Third Edition, Published 1997** here after referred to as the *Microsoft* reference.

As regards **Claims 1, 25, 29 and 37** the *Messerman et al.* reference teaches the following limitations; A computer readable medium including executable code stored thereon, (**Figure 9 Items 410, 408 and 404**), code for simulating logic of an integrated circuit (**Figures 1-9 and Col. 1 Lines 46-58**), determining the direct current component for resistor network (**Col. 1 Lines 34-67 and Col. 2 Lines 1-8**), code for estimating a current consumed by the resistor network for

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estimating a second value of electric power consumed by the resistor network and pre-established power consumption data and code for combining said first and second values to obtain the power consumption of the integrated circuit's resistor network (**Col. 1 Lines 12-67 and Col. 2 Lines 1-46 and Col. 7 Lines 44-63**).

The limitations not expressly disclosed in the *Messerman et al.* reference are, code for simulating logic of basic and mega cells of the integrated circuit, determining the average frequency of operation for each logic state, determining the alternating current component for each logic state consumed by the mega cell.

The *Dangelo et al.* reference teaches code for simulating logic of basic and mega cells of the integrated circuit, (**Figure 1 Item 116 and Figure 8 Items 824 as regards logic see Figure 12 Items 1214 and 1226, and mega-cells Col. 44 Lines 47-61**)

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the *Messerman et al.* reference with the *Dangelo et al.* reference because, motivation to combine, the *Dangelo et al.* reference discloses simulation of logic circuits as well as power estimation (**Col. 36 Lines 35 –67 and Col. 37 Lines 1-67 and Col. 38 Lines 1-9 and Col. 39 Lines 18-67 and Col. 40 Lines 1-67 and Col. 41 Lines 1-52**).

The *Koza et al.* reference discloses measuring the alternating current of each logic cell, (**Note VSOURCE in Figures 25-35 and VSOURCE in Figures 53-61 also note the Z terms in Figures 53-56, these relate to frequency dependent elements in the circuit, Note Figures 82-85, Note Figure 105, Note Figures 108 Item OR6 and Figure 107 Item AND6 and Col. 16 Lines 13-39**). *Examiners Note: As regards the Koza et al. reference to being analogous art Examiner points out that this reference was issued in the 703/14 subclass entitled, “Simulating*

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Electronic Device or Electrical System/Circuit simulation” a mega-cell in an ASIC or FPGA is an electronic device.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the *Messerman et al.* reference with the *Koza et al.* reference because (*Motivation to combine*) by modeling the AC characteristics of each logic cell the designer is able to determine the fitness of each sub-circuit for its intended use (*Koza et al. Col. 82 Lines 37-67 and Col. 83 lines 1-35*).

As regards **Claims 9 and 38**, the *Messermann et al.* reference does not expressly disclose a Hardware Description Language.

The *Dangelo et al.* reference discloses a hardware description language as well as a computer system for simulating mega cells, (**Figure 8 item 604, all of Figure 9, all of Figure 10, 11, 12, 13, 18 and 19, and Col. 1 Lines 25-67 and all of Columns 3, 4. and Col. 5 Lines 1-36, Col. 8 Lines 38-67 and Col. 9-18 and Col. 19 Lines 1-57.**)

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the *Messerman et al.* reference with the *Dangelo et al.* reference because, *motivation to combine*, the *Dangelo et al.* reference discloses simulation of logic circuits as well as power estimation (*Col. 36 Lines 35 –67 and Col. 37 Lines 1-67 and Col. 38 Lines 1-9 and Col. 39 Lines 18-67 and Col. 40 Lines 1-67 and Col. 41 Lines 1-52*).

As regards **Claims 17, 33 and 39**, the *Messermann et al.* reference does not expressly disclose compiling a table that tabulates data.

The *Dangelo et al.* reference discloses a compiling a table that tabulates data as well as a computer system for simulating mega cells, (**Figures 16a-b and Col. 5 Lines 56-63**).

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It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the *Messerman et al.* reference with the *Dangelo et al.* reference because, motivation to combine, the *Dangelo et al.* reference discloses simulation of logic circuits as well as power estimation (*Col. 36 Lines 35 –67 and Col. 37 Lines 1-67 and Col. 38 Lines 1-9 and Col. 39 Lines 18-67 and Col. 40 Lines 1-67 and Col. 41 Lines 1-52*).

As regards **Claims 2-8, and 10-16 and 18-24** the previous rejections disclosed above address all of the limitations for **Claims 1, 9 and 17**.

As regards **Claim 2, 10 and 18**, the *Messerman et al.* reference discloses the use of a computer readable medium for executing code (**Figure 9, Items 408 and 404**).

The *Messerman et al.* reference does not expressly disclose the use of a floppy disk.

The *Microsoft* reference discloses the use of a floppy disk (**Page 201**).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the *Messerman et al.* reference with the *Microsoft* reference because the floppy disk is a known computer readable medium and by storing the program code on a computer readable medium the user does not have to manually program the computer every time the computer executable code needs to be executed.

As regards **Claim 3, 11 and 19**, the *Messerman et al.* reference discloses the use of a computer readable medium for executing code (**Figure 9, Items 408 and 404**).

The *Messerman et al.* reference does not expressly disclose the use of a 3.5-inch floppy disk.

The *Microsoft* reference discloses the use of a 3.5-inch floppy disk (**Page 201**).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the *Messerman et al.* reference with the *Microsoft* reference because the 3.5-inch floppy disk is a known computer readable medium and by storing the program code on a computer readable medium the user does not have to manually program the computer every time the computer executable code needs to be executed.

As regards **Claim 4, 12 and 20**, the *Messerman et al.* reference discloses the use of a computer readable medium for executing code (**Figure 9, Items 408 and 404**).

The *Messerman et al.* reference does not expressly disclose the use of a compact disk.

The *Microsoft* reference discloses the use of a compact disk (**Page 82**).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the *Messerman et al.* reference with the *Microsoft* reference because the compact disk is a known computer readable medium and by storing the program code on a computer readable medium the user does not have to manually program the computer every time the computer executable code needs to be executed.

As regards **Claim 5, 13 and 21**, the *Messerman et al.* reference discloses the use of a computer readable medium for executing code (**Figure 9, Items 408 and 404**).

The *Messerman et al.* reference does not expressly disclose the use of a read-only compact disk.

The *Microsoft* reference discloses the use of a read-only compact disk (**Page 82**).

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It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the *Messerman et al.* reference with the *Microsoft* reference because the compact disk is a known computer readable medium and by storing the program code on a computer readable medium the user does not have to manually program the computer every time the computer executable code needs to be executed.

As regards **Claim 6, 14 and 22**, the *Messerman et al.* reference discloses the use of a computer readable medium for executing code (**Figure 9, Items 408 and 404**).

The *Messerman et al.* reference does not expressly disclose the use of a read/write compact disk.

The *Microsoft* reference discloses the use of a read/write compact disk **CD-R (Pages 81, 82)**.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the *Messerman et al.* reference with the *Microsoft* reference because the compact disk is a known computer readable medium and by storing the program code on a computer readable medium the user does not have to manually program the computer every time the computer executable code needs to be executed.

As regards **Claim 7, 15 and 23**, the *Messerman et al.* reference discloses the use of a computer readable medium for executing code (**Figure 9, Items 408 and 404**).

The *Messerman et al.* reference does not expressly disclose the use of a DVD.

The *Microsoft* reference discloses the use of a **DVD (Pages 145-146)**.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the *Messerman et al.* reference with the *Microsoft* reference because the DVD is a known computer readable medium and by storing the program code on a computer readable medium the user does not have to manually program the computer every time the computer executable code needs to be executed.

As regards **Claim 8, 16 and 24**, the *Messerman et al.* reference discloses the use of a computer readable medium for executing code (**Figure 9, Items 408 and 404**).

The *Messerman et al.* reference does not expressly disclose the use of computer executable code that is compressed and non-compressed.

The *Microsoft* reference discloses the use of computer executable code (**Pages 182-183**) and compressed data (**Page 107**).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the *Messerman et al.* reference with the *Microsoft* reference because by compressing the computer executable code less storage space is required on the computer readable medium.

As regards **Claims 26, 30 and 34**, the *Messerman et al.* reference discloses a programmable computer in comprising a read/write unit in which a computer readable media including computer executable code can be input, the computer executable code being downloaded from the computer readable media via the read/write unit for execution by the processor (**Figure 9**).

As regards **Claims 27, 31 and 35**, a programmable computer wherein the computer executable code is stored on computer readable media is disclosed in **(Figure 9)** of the *Messerman et al.* reference.

However the *Messerman et al.* reference does not expressly disclose the executable code on the computer readable medium being in compressed format and is decompressed and downloaded to the storage media.

The *Microsoft* reference discloses executable code **(Page 182,183)** and a compressed format **(Page 107)**.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the *Messerman et al.* reference with the *Microsoft* reference because, by compressing the executable code, storage space is conserved on the computer readable medium.

As regards **Claims 28, 32 and 36** the *Messerman et al.* reference discloses a programmable computer with a computer readable medium **(Figure 9)**.

The *Messerman et al.* reference does not disclose at least one of a floppy disk, a CD, DVD and an Internet server.

The *Microsoft* reference discloses, a floppy disk **(Page 201)** a CD or Compact Disk **(Pages 81-82)** a DVD **(Pages 145 and 146)** and an Internet server **(Page 430)**.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the *Messerman et al.* reference with the *Microsoft* reference because by storing the computer executable code on various computer readable medium the computer user does not

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need to re-enter the program code each time the code needs to be run and by using an internet server the program code can be accessed by any computer connected to the internet.

Note to the Applicant, the examiner has disclosed examples in each of the references that disclose the elements in applicant's claim for invention, the examiner directs the attention of Applicant to the Abstract, Background of the Invention, Preferred embodiment, and Claims of the references cited.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwin M Craig whose telephone number is 703 305-7150. The examiner can normally be reached on 10:00 - 6:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on 703 305-9704. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-3900.

DMC
December 8, 2002


HUGH JONES Ph.D.
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